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**FIRST-OF-ITS-KIND STUDY FINDS TOXIC FLAME RETARDANTS FROM
CONSUMER PRODUCTS ARE SIGNIFICANT SOURCE OF POLLUTION TO
WATERWAYS**

Seattle, WA – Scientists have been puzzling over why toxic flame retardant chemicals used in products in our homes, like couches and TVs, are showing up in Puget Sound, rivers, and other waters across the state. Now they have an answer thanks to a new peer-reviewed study published today in the journal *Environmental Science & Technology*. The first-of-its kind study uncovers how flame retardants used in products in homes accumulate on clothing, contaminate laundry wastewater, and pass through wastewater treatment plants to pollute rivers and other waters. The study is available at <http://www.watoxics.org/homestowaters>.

“Toxic flame retardants are hitchhiking on our clothes and literally coming out in the wash,” said Erika Schreder, the study’s lead author and science director with the Washington Toxics Coalition. “This study demonstrates for the first time a key way that toxic flame retardants found in our homes are transported to outdoor environments.

Researchers have known for years that chemical flame retardants escape from couches and other products and collect in house dust. Flame retardants have also been previously detected in surface water, sediment, fish, bird eggs, and other wildlife. The new study has now identified the link between the indoor chemicals and the outdoor pollution: home laundry wash water.

Mark J. La Guardia, co-author and senior environmental research scientist at the Virginia Institute of Marine Science, said “Our analysis suggests that from the home laundry wastewater is the primary source of flame retardants to treatment plants, and some of them are going right through the plant to the river.”

Scientists tested dust and home laundry rinse water from 20 Longview and Vancouver, WA homes for 22 chemical flame retardants. Samples were also taken from two wastewater treatment plants, both of influent and effluent, and analyzed for the same group of flame retardants. These treatment plants discharge to the Columbia River.

Scientists found high levels of flame retardants in the dust, laundry water and water treatment plant influent and effluent. This shows flame retardant-contaminated dust is attaching to clothing and washing out in the laundry, making its way to rivers and Puget Sound through wastewater treatment plants. The study found some of these chemicals are not removed during treatment, and are then discharged directly to waterways – hundreds of pounds per year from a single treatment plant.

The study’s findings include:

- 21 flame retardants were detected in household dust, 16 of those in 95% or more of homes sampled. These included PBDEs as well as a number of chemicals that have come into greater use as replacements for the phased-out PBDEs.
- 18 flame retardants were detected in laundry water.

- Chlorinated organophosphate (Tris) flame retardants, used in furniture foam and home insulation, were discharged in the highest concentrations of any flame retardant from wastewater treatment facilities to the Columbia River. The Tris flame retardants detected include TCPP, TDCPP, and TCEP.
- Based on levels measured in treatment plant effluent, the study estimates a yearly discharge of 174 kilograms, or 384 pounds, of the three Tris flame retardants to the Columbia River—from just one treatment plant. That is the equivalent of the flame retardant used to treat 1088 couches.
- Laundry wastewater is a significant source of chlorinated Tris flame retardants to waterways, wildlife and fish. Tris flame retardants are not removed or broken down during the treatment process, but instead are discharged into waterways.
- The study estimates that between one and four percent of the annual production of Tris flame retardants is not staying in consumer products but is leaching out and polluting waterways—a total of more than one million pounds ending up in waterways nationally each year.
- Chlorinated organophosphate (Tris) flame retardants make up on average 72% of flame retardants found in house dust and 92% of flame retardants found in laundry wastewater. Some flame retardants in this group are considered known human carcinogens. There is also evidence of harm to reproduction and the nervous system.

Flame retardants, including chlorinated organophosphates (Tris) as well as the now-banned PBDEs, have been detected in surface water, sediment, fish, bird eggs, and other wildlife. PBDEs have been found in animals relying on the Columbia: ospreys, largescale suckers, and salmon. Laboratory and field studies have linked exposure of fish to PBDEs, the most well-studied flame retardants, to hormone disruption, inhibited spawning, and weakened immune response. In a study of 19 U.S. drinking water systems, two of these compounds, TCPP and TCEP, were found in drinking water at the highest median level of all 51 compounds tested.

"I'm dismayed there are so many toxic flame retardants in my house that I'm exposed to on a daily basis. Finding out they are polluting the rivers and wildlife too is very disturbing," said Patti McGrath, a study participant from Vancouver, WA.

"We eat a lot of fish from the Columbia River. It's time to stop polluting our rivers, our fish, and our children," stated Brett VandenHeuvel, Executive Director for Columbia Riverkeeper. "The easiest way to do that is to stop putting toxic chemicals in the products we buy. It's time for our state to take a stand against toxics."

"Now we know that the same toxic flame retardants polluting our homes and our bodies, are finding their way to our waterways and contaminating them as well. It's pollution that can easily be prevented," said Laurie Valeriano, executive director of the Washington Toxics Coalition. "It's time for the Washington state Legislature to act in the 2015 legislative session to ban these chemicals and create a process to prevent equally bad or worse chemicals from being used in our state."

"This research shows a clear pathway for how toxic flame retardants pollute Puget Sound, the Columbia River and other waterways," said Senator Minority Leader Sharon Nelson (D-Maury Island). "I will continue the fight to pass the Toxic-Free Kids and Families Act in the 2015 legislative session."

For the past four years efforts have been made to pass the Toxic-Free Kids and Families Act (ESHB 1294/SB 6048) in the Washington state legislature. This legislation would prevent the

use of toxic flame retardants, including Tris, in consumer products and prevent the use of substitute chemicals that are equally bad or worse. In the 2014 Legislative session, the bill passed the House by a 72-25 bipartisan vote, but the Senate committee on Energy, Environment and Telecommunications severely weakened the bill and ultimately failed to pass anything for the Governor's signature. Advocates expect to introduce the bill again in the 2015 Legislative session.

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